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# USSR Report

## TRANSPORTATION

No. 59

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# MOTOR VEHICLE

## OSSESKAYA OBLAST SHIFTING FROM RAIL TO MOTOR SHIPMENT FROM SEAPORTS

Moscow VODNYY TRANSPORT in Russian 18 Aug 81 p 2

[Article by Ye. Spektor, chief of Odessa TEP-15695 (transport-dispatch center): "Motor Transport: Both Fast and Profitable"]

[Text] Odessa motorists are constantly striving to shift national economic freight shipment from rail to motor transport. Quite a bit of work has been done along this line, and I should like to touch on several results of it. During the last two years of the 10th Five-Year Plan alone, 62,200 tons of national economic freight was delivered in container vehicles on intraoblast routes, freeing 25,000 multipurpose rail containers and more than 2,500 cars for long-distance shipments. The protection of freight shipped in motor vehicles has improved sharply: during those two years, only one claim was received from a shipper.

Organizing freight shipment in container vehicles for Odesskaya Oblast was only the first step in using transport means more efficiently. We came to the conclusion that the geography of such shipments should be enlarged. With the concurrence of the administration of the Odessa Railroad and with the support of the Ukrainian Communist Party obkom and the republic Ministry of Motor Transport, it was decided to begin shipping freight now being shipped in rail containers by motor vehicle in the large cities of the republic.

This decision was also dictated by the features of the rail line linking Odessa to Nikolayevsk and Kherson, as freight was taking 3-4 days or longer to make this 300-kilometer run. After studying the state of affairs on this sector in detail, we recognized the appropriateness of transporting some of the goods by motor vehicle.

This proposal was made at a meeting of the transport workers' coordinating council attached to the Odesskaya obkom and received its full support. The transport-dispatch centers (TEP's) of three oblasts worked out the technology for switching freight from rail to motor transport. According to preliminary calculations, the economic impact of introducing this method is already more than 100,000 rubles, and several thousand rail cars have been freed for other uses.

In recent years, a somewhat strained situation has developed with regard to bringing foreign trade freight in from ports of the Black Sea and Soviet Dunay steamship lines in connection with the shortage of multipurpose rail containers and cars. After consulting with the seamen, the transport-dispatch center proposed switching a portion of the general freight from the ports of Odessa, Il'ichevsk and Izmail from rail to motor transport, seeing that positive experience was already available.

With a view towards doing this work and coordinating it, a specialized dispatch center was created under the Odessa transport-dispatch center, and intercity shipment dispatch centers were opened in the seaports. They have acted in close contact with one another, studying freight flows, telegraphing consignees for their agreement to ship freight by motor transport, drawing up daily shipment plans, ensuring that vehicles are loaded and that freight is protected.

Both the facilities of the Odessa motor transport freight administration and those of related administrations, the Ukrainian highway production association and empty vehicles of other ministries and departments going in parallel directions, are used to haul general freight arriving at the seaports.

The proportion of foreign trade freight in our shipment volume is constantly growing. Whereas 14,100 tons was shipped from Odessa, Il'ichevsk and Izmail in 1980, this figure has already been exceeded by 700 tons in the first four months of this year. In May alone, 8,000 tons of goods were shipped from the port of Odessa.

However, not everything depends on us transport workers. Thus, ships with cargo for the UkSSR Ministry of Procurement stood idle for a long time in ports of the Black Sea and Soviet Dunay steamship lines. In spite of repeated requests, the enterprises of this ministry did not consent to have them shipped by motor transport, citing as the reason that the rates for such shipment are higher than for rail shipment. And many such cases could be cited.

Some administrators think that transport outlays and output net cost will rise if freight is switched from rail to motor transport. This is bureaucratic delusion. When choosing types of transport, we need to proceed not from a bald comparison of rates, but from overall state expenditures on shipping and the availability of transport opportunities. In fact, a comparison of rates alone does not take into account expenditures on delivering freight to shipping stations and from stations of designation, on additional freight-handling operations, on storing freight in stations, on natural and artificial losses of freight (which are considerably higher in rail shipment than in motor transport). And of course, no shipper considers what keeping freight for long periods in seaports and ships's standing idle costs the state. The whole problem is that none of the consignees is materially responsible for freight storage or ships's standing idle, as is the case in other types of mainline transport, such as rail and air, for example.

Moreover, consideration is not given to the time involved in delivering freight, and in fact, any competent administrator knows that freight sitting in storage or waiting for transfer is frozen monetary means.

These questions must be resolved by competent agencies attached to the USSR Gosplan, UkSSR Council of Ministers and oblispolkoms with corresponding rights.

11052
CSO: 1829/328

MOTOR VEHICLE

## REGULATIONS ON USE OF OFFICIAL, SPECIAL-PURPOSE PASSENGER VEHICLES

Moscow SOBRANIYE POSTANOVLENIY PRAVITEL'STVA SOYUZA SOVETSKIKH SOTSIALIS TICHESKIKH RESPUBLIK in Russian No 11, 1981 pp 283-286

[Decree No 178 of the USSR Council of Ministers on Regulations on the Use of Official and Special-Purpose Passenger Vehicles]

[Text] The USSR Council of Ministers notes that many executives of ministries, departments, enterprises, institutions and organizations do not adequately control the use of official and special-purpose passenger vehicles or take necessary measures to reduce the cost of their maintenance.

In a number of cases maintenance costs of official cars exceed the funds allocated for these purposes and are illegally written off as production overhead. Passenger cars are often used by officials for trips not related to their official duties, car mileages and gasoline expenditure exceed the established quotas.

With the purpose of further regulating the use of official and special-purpose passenger vehicles and strengthening control over the spending of funds for their maintenance, the USSR Council of Ministers decrees:

1. The USSR ministries and departments and the Union Republic Councils of Ministers shall:

a) with the concurrence of the USSR Ministry of Finance, by 1 July 1981, approve the overall number of official passenger vehicles to be assigned to subordinate enterprises, institutions and organizations, with the aim of bringing that number in line with the funds allocated for their maintenance (taking into account average per-vehicle maintenance costs);

b) approve for subordinate enterprises, institutions and organizations:

the number of official passenger vehicles assigned to them on the basis of the endorsed total number of such vehicles and the funds allocated for their maintenance;

by 1 October 1981, the lists of officials authorized to use passenger vehicles for business trips, taking into account the approved number of such vehicles and the funds allocated for their maintenance.

2. The USSR ministries and departments and the Union Republic Councils of Ministers shall:

a) by 1 July 1981, and with the concurrence of the USSR Gosplan, the USSR Ministry of Internal Affairs, and the USSR Ministry of Finance, finalize the lists of special-purpose passenger vehicles, having in mind that said lists should include medical aid vehicles, technical emergency vehicles, vehicles required by communications enterprises to deliver mail, vehicles of enterprises and organizations of the system of the USSR Gossnab designated for centralized haulage of small cargo consignments, servicing instrument rental facilities and transporting secondary raw materials, vehicles designated for collection purposes, as well as other vehicles in which stationary equipment is, as a rule, installed.

Enterprises, institutions and organizations may install stationary equipment on passenger vehicles operated by them according to procedures defined by the USSR Ministry of Internal Affairs;

b) carry out measures aimed at reducing the staff of chauffeurs of special-purpose vehicles by introducing job overlapping.

3. The USSR Ministry of Internal Affairs shall register passenger vehicles belonging to enterprises, institutions and organizations: official vehicles within the quotas of official passenger vehicles assigned by the superior organizations; special-purpose vehicles, according to lists specified in accordance with this decree.

4. The USSR ministries and departments and the Union Republic Councils of Ministers shall hand over all passenger vehicles made redundant in subordinate enterprises, institutions and organizations as a result of the implementation of the measures stipulated in this decree, to trade organizations in accordance with the established procedures, for sale to the population through commission stores. The proceeds from the sales of these vehicles shall be remitted to the revenues of the Union budget in a manner prescribed by the USSR Ministry of Finance.

5. The USSR Gosplan, USSR Gossnab, and USSR Ministry of Finance shall establish monthly gasoline quotas per official passenger vehicle and put them into effect from 1 January 1982.

6. The USSR ministries and departments and the Union Republic Councils of Ministers shall:

continue to encourage subordinate enterprises, institutions and organizations to use official passenger cars for business trips without staff chauffeurs, as stipulated in the decree of the USSR Council of Ministers of 31 May 1973, No 372 (SP SSSR, 1973, No 14, art 72);

take more effective measures to ensure that official and special-purpose passenger vehicles are used solely for their designated purposes and to charge persons violating this procedure in accordance with the established procedures;

with the concurrence of the USSR Gosplan and the USSR Ministry of Finance, carry out during 1981-1982 experiments at a number of subordinate enterprises, institutions and organizations in the use of their own passenger cars by individual employees whose duties involve regular business trips, with due refunding of the expenses incurred by them in such trips. The results of these experiments are to be reported to the USSR Gosplan and the USSR Ministry of Finance by 1 March 1983.

The USSR Gosplan, together with the USSR Ministry of Finance, shall establish amounts of such refunds and the procedure for making them.

7. The Union Republic Councils of Ministers are to draw up and implement measures aimed at further strengthening the production and technical base of general-purpose motor transport enterprises servicing the passenger vehicles of enterprises, institutions and organizations, with the objective that passenger vehicles for said enterprises, institutions and organizations in the capitals of the union and autonomous republics, in kray and oblast centers and in large cities, shall be provided (irrespective of departmental subordination) mainly through such motor transport enterprises.

As this form of servicing is introduced, the USSR ministries and departments and the Union Republic Councils of Ministers shall have the passenger vehicles belonging to subordinate enterprises, institutions and organizations handed over, without financial compensation, to the said general-purpose motor transport enterprises.

8.*

9. The USSR ministries and departments and the Union Republic Councils of Ministers are to report on the implementation of this decree to the USSR Council of Ministers by 1 January 1982.

Chairman of the USSR Council of Ministers N. Tikhonov

Administrator of Affairs of the USSR Council of Ministers M. Smirtyukov

Moscow, The Kremlin, 16 February 1981, No 178

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*Paragraph 8 is not brought out since it concerns a one-time task.

9681
CSO: 1829/334

MOTOR VEHICLE

## BRIEF

AUTOMOBILE DESIGN IMPROVEMENTS--"Izhmash" association began producing new vehicle modifications yesterday. The vehicles leaving the conveyor have a more dynamic shape and are equipped with reliable disc brakes and improved lighting. Motor capacity has been increased. More use has been made of progressive polymer materials. [Text] [Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 3 Jul 81 p 2] 11052

CSO: 1829/328

# OCEAN AND RIVER

## PLANS OF SOVIET SHIPBUILDERS DESCRIBED

Moscow GUDOK in Russian 13 May 81 p 4

[Article by D. Sasorov: "The Plans of Soviet Shipbuilders"]

> [Text] The Basic Directions for the Economic and Social Development of the USSR for the Years 1981-1985 and for the Period Until 1990 note: "To reinforce the fleet with specialized ships--container ships, lighters, railroad ferries, Artic sailing ships, and ice breakers. To begin equipping merchant ships with atomic power stations."
>
> According to the decision of the 26th CPSU Congress, the maritime, river, and fishing fleets will have fundamentally new highly productive vessels added to them during the 11th Five-Year Plan.

### A Two-Section Diesel Ship.

Until now the river fleet has known dry cargo ships with a capacity of 5,000-6,000 tons. During the last five-year plan an experimental component ship with a capacity of 9,000 tons was launched. It was decided to begin a series of ships on its basis. The pilot diesel vessel received the name of "26th Congress of the CPSU." With this the shipbuilders were emphasizing that they had begun the realization of the program which had been mapped out by the party congress for the 11th Five-Year Plan.

The new dry cargo vessel will take 11,600 tons on board. Its two sections are united by means of a special coupling device: the head section performs the function of a barge, while the rear and chief section performs the role of a pusher. The cargo is located in both sections in approximately equal shares. With a full load the diesel vessel develops a speed of 16 kilometers an hour. The ship is automated, and its crew consists of only 19 men. The automatic equipment will make it easier to sail such an impressive diesel ship: its length is 137.8 meters, and its width is 16.5 meters. Incidently, the diesel will also be operated in a shortened variant. It can leave one section behind in a port for unloading.

### The Fire Fighting Ship "Flame"

Among the innovations of shipbuilding is the firefighting ship "Flame" which can take on board any firefighting vehicles and deliver them to the site of a forest fire. And frequently the best route to forest tracts lies across waterways: indeed, our country contains 250,000 lakes and 150,000 rivers. Of course, not all of them are navigable for ordinary, or even for small ships. But "Flame" is handy in that this vessel moves on an air cushion.

The vessel is a small one: its length is only 26 meters, and its width is 6.5 meters. It can go right up to a shore and through its bow ramp take on or unload a firetruck or, for example, mobile pumping equipment and 18 firemen.

Instead of the ordinary screw propellers, the ship makes use of water jet devices which are set into motion by two diesels. There are two radio stations on board for communications with the fire department and one for communications with other vessels and with the shore.

The Tanker Fleet.

The growth of maritime hauls has led to the creation of ships which specialize in specific cargos. Hauls have been increasing and the dead weight of ships has been increasing. Tankers have become especially big. Their displacement has crossed the half-million-ton mark. Meanwhile, shipments of crude petroleum are decreasing and preference is being given to finished petroleum products. The world tanker fleet is oversaturated. As a result of this, the construction of super tankers is being curtailed. The Soviet Union is also stopping the construction of tankers of the "Krym" type (dead weight of 150,000 tons). The turning away from the construction of large tankers is also a result of the fact that in accidents with such vessels an enormous amount of petroleum is discharged into the sea.

Soviet shipbuilders have proposed a design for a fundamentally new tanker of the "Pobeda" type (length--248.8 meters, width--32.2 meters, cargo capacity--68,000 tons, main engine capacity--18,500 horsepower, and speed--16 knots),

If it is considered that the service life of such vessels is 25 to 30 years, then it can be seen that tankers of this type will be sailing in the 21st century. On the "Pobeda" all of the tanks are protected against direct contact with the water. The design solution has been found here not only on the basis of a second bottom, as on the "Krym" tanker, but also of second sides which are a distance of two meters from the outer ones.

On empty voyages the space between the sides of the tanker are filled with water--a completely isolated ballast. It will never come into contact with the content of the tanks.

The "Pobeda" can boldly be called a clean tanker which will not pollute the seas. The duplication of the steering system substantially increases the reliability of the ship and excludes the possibility of a repetition of the tragedy of "Amoco Cadiz" where everything began with the failure of the steering to work. This enormous tanker under a Liberian flag hit on reefs and broke up, and a "black tide" poured onto the shores of Brittany.

## Atomic Ships

For more than 20 years the Soviet Union has been building atomic icebreakers which lead caravans of ships over the Northern Maritime Route and have greatly prolonged the navigation period in this difficult area for sailing. The names of these icebreakers are the "Lenin," and "Arktika," and the "Sibir'." Incidently, the "Arktika" became on 17 August 1977 the first ship in the world to reach the North Pole in surface water sailing.

In the building slips now is the new atomic icebreaker "Rossiya." It is of the same type as the "Arktika" but will be supplied with improved instruments and machinery and the working and living quarters will be more conveniently placed.

Our shipbuilders have also created the design for an icebreaker-transporter lighter and container carrier with an atomic power installation with a capacity of 40,000 horsepower. The length of the ship is 260 meters, the width--32.2 meters, the deadweight---31,900 tons, and its speed in ice-free water is 20 knots. The ship will take 73 lighters in its holds and on its deck.

A loaded lighter weighing around 500 tons will be lifted onto the ship and lowered into the water by crane. After leaving the lighters intended for a given port in the roadstead, the ship will continue its voyage, and the lighters will be towed into the port by launches.

The atomic lighter carrier which is designed for the Artic will be of a strengthened ice class. It will be able to move through ice of average thickness.

## Ships On Underwater Wings

A quarter of a century ago Soviet shipbuilders were the first to build diesel passenger ships on underwater wings. The Soviet "Rakety" (66 seats), "Meteory" (120 seats), and "Voskhody" (65 seats) are known in many countries. In our day an improvement of these ships is taking place, and the second generation of winged diesel ships is being born. The place of the "Meteor" is being taken by the "Zenit" whose speed will increase from 65 to 90 kilometers an hour. In place of the "Voskhod" the "Lastochka" will be produced. Here also the speed will increase from 65 to 90 kilometers an hour. The shallow-water ship "Belarus'" will replace the "Poles'ye." Its speed will remain as before--65 kilometers an hour, but the number of seats will increase from 40 to 50.

At one time sea-going variants were created on the basis of the winged river diesel ships. The 106-seat "Kometa" is one of the representatives of this class. Now this vessel is being replaced by the two winged diesel ships "Al'batros" and "Kolkhida" (120 seats). These ships are of the same type; the difference is only in their diesels. The "Al'batros" will operate on our internal lines and is equipped with two diesels of domestic production; the "Kolkhida," which is intended for export, will be equipped with diesels produced in the Federal Republic of Germany. Compared to the "Kometa" the speed of these ships has increased from 32 to 35 knots.

As is believed by our designers, at the end of the five-year plan still another diesel ship on underwater wings for maritime communications will appear. It already has a name: the "Tsiklon." It will be able to take on 250 passengers and travel at a speed of 45 knots.

2959
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## DEVELOPMENT OF SHIP MAINTENANCE SERVICE

Moscow MORSKOY FLOT in Russian No 5, May 81 pp 46-47

[Article by S. Dranitsyn, candidate of engineering: "Developmental Trends in Technical Maintenance"]

[Text] In the last 10 years, the maritime fleet has undergone significant changes. The increase in tonnage has been accompanied by qualitative changes in the structure of the fleet. Large-capacity ships and specialized ships have been put into service--ships that are designated for work within the framework of progressive technological transportation systems (involving containers, roll-aboard carriers, lighters, ferries, barges and tugs). Ships have appeared that are equipped with power plants of a new type. There have been increases in the ships' dimensions and speed, in the capacity of the main engines, in the technical equipment and in the power-to-weight ratio. There have been changes in the composition of the ships' equipment. Automation and centralization of control have come to be used extensively. Ship-building costs have sharply increased, as have the economic losses resulting from the ships' withdrawal from service. The changes that have occurred have made it necessary thoroughly to reorientate the principles of technical maintenance of the fleet (including repair) and to bring them up to the level of development of the material-technical basis of navigation. The problems concerning technical maintenance must be solved, while taking into consideration the special, maintenance-related features of the development and conditions of fleet operation.

The first special feature is the sharp increase within the fleet of the share of specialized ships; the know-how for operating these vessels is only now being accumulated. In 1975, there were put into service 16 container-carriers (class "Fritsis Gaylis," "Aleksandr Fadeyev," and others) and 14 roll-aboard ships (class "Ivan Skuridin," "Inzhener Machul'skiy," and others. At present, the fleet is being supplemented by container-carriers ("Khudozhnik Sar'yan" class) capable of holding 700 containers, roll-aboard carriers with a capacity of 60,000 cubic meters (class "Magnitogorsk" and "Kapitan Smirnov"), and lighter transporters (ships and railroad ferries) with a capacity of 26 barges. For the most part, the basic equipment of these ships is of an essentially new type and their maintenance involves certain difficulties.

The second special feature is the extension of the range of equipment to be serviced. The ships have been equipped with new types of power plants (medium-speed diesel and gas-turbine engines), loading and transshipment equipment, and multi-purpose, electronic control systems. Maintenance of these installations requires special equipment, rigging and appropriately trained personnel.

The third special feature is the increasing complexity of the operating conditions. To a large extent, the expansion of transportation takes place in regions characterized by harsher navigational conditions. This expansion is accompanied by an increase in arctic transport, a rise in the volume of chemically active cargo--causing intensified wear of the ships' structures--and an increase in the freight haulage carried out by foreign shipping firms, especially firms of the developing countries. What with the time-charter leasing and long-term contracts, there are higher demands on the ships' condition and on the operating schedules. The duration of moorage in the ports is reduced. The losses due to demurrage are increasing; of late, they have been rising continuously, but what with the ships increased carrying capacity and the shift toward specialization, they have become especially palpable. This increases the importance and significance of the operating period and makes it the key problem of technical maintenance.

The fourth special feature is the relatively slow reduction of the volume of maintenance. The increase in technical equipment and in the power-to-weight ratio have led to an appreciable rise in the ships' cost. In the last 10 years, the cost of 1 ton of dead weight has increased approximately 1.5-fold and it continues to increase, especially for specialized ships. On account of the high cost, it is not possible sharply to reduce the ships' normative service life. With the introduction of new amortization norms, the normative service life of multipurpose dry-cargo ships now is 25 years; for bulk-carriers up to 70,000 tons displacement and for timber-carriers, it is 23 years; for container-carriers, roll-aboard ships and lighter transporters, 26 years, and for tankers and dry-bulk tankers up to 10,000 tons, 19 years. With such terms of service and such high expenditures on reliability, there is no marked reduction in the volume of maintenance. It appears that aside from the routine repairs, the frequency of which will be reduced, there will be required a higher volume of repair work in connection with the replacement of individual hull structures and pipe and cable systems. The volume of maintenance depends on the fleet's age structure. In the second half of the ship's service life, the maintenance volume increases by 20 percent and more. With the increase in tonnage and in the constant absolute rates of replenishment, there takes place an ageing of the fleet. Of late, the average age of 1 ton of carrying capacity has been rising: In 1965, it amounted to 7.2 years; in 1970, it was 8.1 years, and in 1975, 9.2 years. In the current five-year plan, it will rise further. The dead weight of dry-cargo ships 10 to 14 years old and of liquid-cargo ships 8 to 10 years old amounts to approximately one-third of the total dead weight of that type of ship in the fleet; of necessity, this affects the volume and cost of the repair work. In the near future, one cannot expect any slackening of the requirements of the classifying associations, even though the frequency of the examinations will be reduced, while continuous inspection will be extended. Improvement of the shipbuilding industry and its associated industries will somewhat increase the ships' reliability, and in combination with the increase in carrying capacity this will reduce the relative maintenance volume; however, this reduction will be insignificant.

The fifth special feature: The changes in the maintenance structure and the increase--within the overall framework of maintenance--in the volume of operations involving the hull. This is connected with the increased complexity of the hulls and hull structures--especially on the specialized ships--and with the continuous increase in the volume of maintenance--carried out under operating conditions--of the ships' equipment. Whereas formerly hull maintenance constituted about 30 percent of the overall volume of maintenance, it now reaches 50 to 60 percent.

The sixth special feature: Expansion of line navigation and changeover to continuous operation schedules requiring precise coordination of the ships' operations with the operations of the shipbuilding enterprises.

Undoubtedly, each of these special features leaves a definite imprint on technical maintenance. In the long term, however, technical maintenance will develop in a complex fashion in regard to all of the trends involved. These trends include the ships' operational reliability as the technical or original basis of maintenance, which determines the volume and structure of the maintenance jobs, the ways of reducing them and the tendencies of change. They also comprise the organization, strategy and process of maintenance, which determine the economically expedient organizational forms, principles and technological schemes of work execution that ensure safe navigation and efficient operation of the fleet.

The volume and the structure of the operations designed to keep the ships in good working order depend above all on the ships' reliability, which determines their service life, dependability, technological qualities and--consequently--the maintenance routine (frequency and labor-intensiveness). This demonstrates the importance and significance of the problem concerning reliability. Stated in general terms, the ultimate objective regarding this problem can be formulated as follows: To build ships distinguished by a level of reliability that ensures minimal aggregate expenditures on their construction and operation. Once more, this underscores the fact that reliability of ships is a complex problem--a problem faced by planners, builders and operators. Reliability of ships as complex engineering structures is determined by four interconnected indicators: Constructional safety; reliability and technological feasibility of the maintenance of basic elements; the rate of brief forced stops at sea; the labor-intensiveness of maintenance, which determines the total labor input per unit of time (the duration and cost of maintenance are derivatives of labor-intensiveness).

The large volume of operations regarding maintenance of the fleet, the broad range of maintenance jobs, and the diverse technological and industrial possibilities of execution necessitate finding the most efficient methods of organizing the technical maintenance of the ships. For all the diversity of the methods employed in international practice, the main principle stands out clearly: It is necessary to carry out under operating conditions as much maintenance work as is possible. It is considered that during repairs at the shipyard only those jobs should be done that cannot be done under operating conditions. These jobs include painting the ships' underwater parts; repair of the outboard sluice valves, of the protectors, of the propeller and rudder assembly and of the end shaft; replacement of the framing and plating; classifying inspection. The basic objective behind this principle is to maximize the operational period. By itself, this objective is nothing new; it has been well-known all along. But this task has become most acute with the appearance in the fleet of large-capacity and specialized ships, the decommissioning of which entails immobilization of enormous material assets and great financial losses. The

Continuous Technical Maintenance System--which was developed and introduced in the fleet over 10 years ago--stipulates introduction of planned technical maintenance and inspection of the ships under operating conditions, with a maximum share of the work carried out en route and in port--during loading and subsidiary operations--and changeover to maximum operational repair cycles determined by limiting jobs that are technically impracticable under operating conditions, requiring equipment and outfitting at the shipyard.

The main advantage of the Continuous Maintenance System consists in the fact that it makes it possible to reduce to a minimum the duration of ship maintenance at the ship-repair plants and to curtail the work required to keep the fleet in good working order. On account of the changeover of the fleet to the Continuous Maintenance System, it has been possible significantly to increase the efficiency of technical operation. In addition, the system has made it possible to change over to a certain form of ship repair distinguished by a 4-year operational repair cycle that corresponds to the frequency of the classifying inspections and that has been widely adopted in navigational practice abroad.

In the future, technical maintenance of the fleet will continue to be based on the Continuous System, which makes it possible fully to utilize the potential capacities of the ships, above all of the large-capacity and specialized ships. The development of this system will proceed in three directions:

The first direction: Broadening the scope and increasing the volume of the maintenance jobs carried out under operating conditions on the basis of improved methods of technical maintenance. The overall structure and volume of the jobs carried out under the Continuous Maintenance System are not constant. They are determined above all by the technological possibilities and they may change. Obviously, as the technology improves, the scope of the jobs carried out under operating conditions will broaden and their volume will increase. Increasingly, this category will comprise operations that traditionally have been considered jobs requiring the expertise of the ship-repair plant. Of course, the execution of such jobs under operating conditions should not be viewed in overly simplified terms. They cannot be assigned to the ship's crew or to the ship's regular repair brigades. These jobs must be carried out by ship-repair plants or specialized industrial enterprises and they must be preceded by thorough technical, technological and organizational preparation. As the maintenance work carried out under operating conditions becomes more complex, it is necessary technically and technologically to reorganize the work of the ship-repair plants so as to increase their mobility and operativeness and more closely to involve in the in-service maintenance the enterprises supplying the ships' equipment.

The second direction: Employment of underwater ship cleaning, inspection and maintenance. In the last 10 to 15 years, the methods and means of cleaning, inspecting and repairing ships afloat have been developing rapidly. Essentially, this is the extension of continuous maintenance to the submerged part of the hulls. At present, there are in operation approximately 90 underwater-cleaning stations, which are located all over the Pacific Ocean--primarily in tropical and subtropical waters--and which are equipped with cleaning installations of various types. Underwater hull cleaning is done also on the ships of our fleet. In 1978, 286 ships were cleaned; of these vessels, 158 were cleaned in home ports. The cleaning of ships at sea is an efficient and promising procedure. This is the beginning of complex operations concerning underwater ship inspection and maintenance and these operations will be developed and further extended.

The third direction: Establishment of a well-developed network of bases of technical ship maintenance. Efficient execution of in-service maintenance work largely depends on the organizational forms of maintenance. To carry out the maintenance under operating conditions, it is necessary to establish a well-developed network of ship maintenance bases on the most heavily traveled navigational routes and at the points of heavy ship concentration. This network of bases represents the technical foundation of continuous maintenance. Obviously, the network's structure and capacities must be interconnected with the organizational forms of maintenance. With the changeover of the fleet to the Continuous Maintenance System, we have laid the foundations for a well-developed network of ship-maintenance bases in our home ports. In the long term, it is planned to expand the presently operating service bases and to establish new ones, including bases in foreign ports. The establishment of bases in foreign ports must be carried out within the framework of socialist integration of the CEMA member states.

Among the problems involved in maintaining the fleet in good working order, maintenance strategy is of special significance. Such a strategy lays down the basic technical principles of maintenance and thus determines the requisite input of labor, capital, time and material and also the ships' carrying capacity and operational reliability and--consequently--the constructional safety of maritime navigation. This explains why the ship owners direct so much attention to selecting a maintenance strategy. As is well known, maintenance can be forced as well as planned and preventive. Forced maintenance is carried out after an equipment breakdown; planned, preventive maintenance is carried out well before the appearance of defects, of intensive wear and tear and ageing. There are two types of planned, preventive maintenance: Maintenance according to schedule--calculated either in terms of calendar time or of time spent--and maintenance in accordance with the actual condition of the equipment and with the forecast regarding its change. Like all other sectors of the national economy, the maritime fleet practices planned, preventive maintenance according to schedule. By its nature, this type of maintenance is oriented toward sets, since the schedule or the maintenance routine (frequency and volume) are fixed in accordance with the averaged practice of operating monotypic sets of equipment on the basis of maintenance of minimum average operational expenditures. This is what constitutes its simplicity and at the same time its weakness.

In contrast to maintenance according to schedule, maintenance in accordance with the condition of the equipment is local, making allowance for individual characteristics of the equipment. According to calculations made in our country and abroad, employment of this type of maintenance will make it possible to reduce the volume of maintenance work by approximately 30 percent. Specialists are agreed that presently the key problem is to switch from maintenance according to schedule to maintenance according to the condition of the equipment. This is the purport of the strategy of fleet maintenance at the present stage.

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## OCEAN AND RIVER

### PROBLEMS OF RIGA PORT DISCUSSED

Moscow VODNYY TRANSPORT in Russian 6 Aug 81 p 2

[Article by G. Kuznetsov, director of the Riga Ship Repair Plant: "The Reconstuction Awaits Completion"]

[Excerpts] If one were to trace the dynamics of the development of the Riga Ship Repair Plant over the last two decades it would be possible to have a clear view of the fruits of the reconstruction and reequipping of the enterprise. During the last several five-year plans the state has been investing substantial resources into the creation in the northwest of the country of a large base for repairing the fleet. During the reconstruction process an overall expansion of the plant was carried out and substantial new capacities were put into operation.

During the 10th Five-Year Plan alone the volume of production at our enterprise increased by 40 percent. New wharfs were built and a new 30,000-ton floating dock was put into operation. Using its own resources, our collective has erected the building of a woodworking shop and has reconstructed the floating departments of the casting section, replacing the cupola furnace with high-speed induction furnaces. The construction with our own resources of an oxygen station is being completed.

Recently the repairing of new large capacity ships of the "Pablo Neruda" and "Yurmala" type has been mastered at the plant's wharfs in Vetsmilgravis. Our shipbuilders have also built several ferry-icebreakers which are performing excellent service at the Kerch' crossing, in Estonia, and in the Far East. And here also a unique ice-breaking attachment which is designed for icebreakers that work in marine bays was built for the first time.

Although the reconstruction of the plant began as early as 1963, its end is not yet in sight. The work has become excessively prolonged, funds are being mismanaged, and the one who suffers from this, of course, is the entire collective, since the fulfillment of an intense production program simultaneously with the reconstruction is a task which is by no means easy.

At the present time the plant reconstruction has been achieved by approximately 60 percent. Of the shops which were stipulated by the planning assignment, only the machinery shop has been built, and the plating shop is being built. All of the remaining facilities which were stipulated by the plan for the fundamental reconstruction of the enterprise are not yet ready since there has not been sufficient financing for them and the capacities of the contruction organizations have been insufficient. To date such large shops which define ship repair work as the hull shop, piping shop, and forging shop have not been built: they have been united into a single block of shops No. 1-b. The same kind of picture exists with the construction of the dock shop and certain auxiliary production sectors.

A reconstruction "on brakes" by no means fosters the harmonious and well-directed development of ship repairing as a whole. Through the years there has developed at our plant a clear disproportion between the excellently equipped machinery shop and the hull, dock, and piping shops which have lagged far behind it in development. On account of this expensive wharfs, docks, and equipment cannot be fully used.

At the enterprise there is in fact no building for the dock shop which could be equipped with the necessary highly productive equipment and powerful lifting devices. For this reason the production base of this shop had to be accommodated on a floating workshop. Here also are the tool storerooms, the fittings section, and the personnel facilities. All of this, of course, lowers labor productivity and increases transportation expenditures. Since our docks are located at a distance of one and one-half kilometers from the plant's basic shops, the losses connected with delivering parts and materials to the worksite are great and the goings and comings of the workers take up quite a bit of time. Large-dimension details from the propeller and rudder complex also have to be transported from the machinery and hull shops to the docks.

Our economists have calculated that if we had been able during the reconstruction process to put a dock shop in operation which was located in the area of the floating docks themselves we could have in this way saved 70-75 dock-days every year and performed repairs on an additional 12 to 14 ships.

The retarded reconstruction rates are having exactly the same effect upon the use of the reserves of the hull shop. Here we are suffering from insufficient work areas, from obsolete equipment, and from the insufficient load capacity of the cranes. Today the guillotine scissors, the press-clearing, and the edging machine tool are no longer at all suitable for us. For example, an Artic ship comes to us for repairs whose hull sheeting is thicker than we are able to work on our obsolete equipment. What is left to be done? Return to using the sledge hammer?

One way or another, but all of these technical and technological disorders and discrepancies reduce the labor productivity of our ship assemblers and welders by 15-20 percent.

An equally substantial economic effect could be achieved from the commissioning of new production areas and modern equipment in the piping and electrical shops.

If, as we have already mentioned, the plant's reconstruction rates have for a long time remained unsatisfactory, there are two basic reasons here: first, the Ministry of the Maritime Fleet has been allocating insufficient funds for the reequipping of the enterprise, and, secondly, our contractors--the "Balttransstroy" and "Baltmorgidrostroy" construction trusts--have been impermissably prolonging the fulfillment of their work.

There is a sad picture to be seen, for example, on that part of the plant grounds where our 10th wharf was supposed to be after the completion of the reconstruction. At one time the Construction Administration-422 of the "Baltmorgidrostroy" began work here, knocked more than 200 tons of piles into the ground, and soon after abandoned the construction site. Moreover, our contractors grabbed and took with them 428 tons of the expensive and scarce piles. Now there is neither the new wharf nor the metal which is necessary for the construction to continue. And so the incompleted wharf stands there and the pile wall is rusting and becoming unusable.

We have already repeatedly appealed to the contractor about this and called upon his professional pride and honor, but in vain. Instead of carrying out their contract commitments, the construction workers are even taking the position of being "offended," and justifying themselves by the fact that the plant allegedly did not provide them with a work front on time. But this is purely an excuse which is entirely baseless.

While speaking about the external reasons which are holding back the use of production reserves and the harmonious development of production, we must not keep silent about internal shortcomings. We still have large losses of working time, there are gaps in our educational work with people, especially with the youth, and much still has to be done for our cadres to feel a daily concern about their everyday lives and cultural leisure. We shall work energetically on the solution of these problems during the 11th Five-Year Plan which, as the collective of the Riga Ship Repair Plant hopes, should become the five-year plan of the completion of the basic work to reconstruct our enterprise.

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## BETTER FLEET SERVICES URGED

Moscow VODNYY TRANSPORT in Russian 6 Aug 81 p 2

[Article by I. Kozlov, senior engineer in the Main Administration for Ports of the Ministry of the River Fleet: "Increase Responsibility"]

[Text] An improvement of overall services is an enormous reserve for increasing the carrying capacity of the fleet, reducing the cost of hauls, and improving the technical condition of ships. The successful work of the fleet depends to a large extent upon the level of the quality with which services are organized and upon how well ships and their crews are supplied with what is essential.

Unfortunately, there are still quite a few shortcomings and much undone work in such an important work sector as overall fleet services, a fact which has been noted in critical articles in VODNYY TRANSPORT. A year and a half has passed since the publication of articles on this topic, but many of the problems which were revealed in the newspaper have remained unresolved.

As the 1980 navigation season showed, in many steamship companies there were interruptions in supplying ships with food, spare parts, and navigation materials; the necessary attention was not given to uninterrupted services, and no strict account was taken of the work of overall fleet services (OFS), just as there was no socialist competition between OFS points and sectors.

This year also there have already been refusals in the Western Steamship Company. Thus, in March the Western Steamship Company did not supply the "Volgo-Balt-37" with water and food and did not take its hold waters. It explained its refusal by citing its weak material and technical base and repairs on its treatment plant. Indeed, the material and technical base of the fleet services system in the Kaliningrad Port has long existed without changes. But is this the only reason that diesel ships are not serviced? This question cannot be answered affirmatively. The OFS Group of the Kaliningrad Port works only during the daytime. In the steamship company's administration only the senior engineer from the port's division works on overall services and, in addition to this, he is charged with directing the processing of the fleet and of railroad cars, the technical operation of port, and many other things. It is natural that with such a workload he does not always have the time for OFS. There is one conclusion to be drawn from this; it is very important, of course, to improve the material and technical base of the OFS system, but at the same time the organization of the work of services at the proper level should not be forgotten.

The same kind of reproach could be addressed to the Moscow Steamship Company which stated in the Main Administration for Ports of the Ministry of the River Fleet that it needs 59 vessels for its service fleet, but, at the same time, did not map out any concrete measures of an organizational character at all in its OFS development plan. It did not organize, for example, overall services dispatcher rooms in the ports of the steamship company and in its administration.

In certain ports there are OFS dispatcher rooms and the jobs of chief dispatcher and deputy chief dispatcher have been introduced. But in practice these dispatchers do almost no work with overall services. Thus, for example, in the port of Perm' the deputy chief dispatcher for OFS works on the movement of the fleet and he has under his subordination four duty dispatchers who also manage the work of the fleet. The same kind of situation has developed in the ports of Kirov, Pechora, in the Southern port of the capitol, and others. OFS dispatchers work on the movement of the fleet, loading and unloading operations, local hauls, and, to a lesser extent, participate directly in overall services for ships. The question of creating special OFS dispatcher rooms in all of the large servicing points demands an immediate decision. More punctual, fuller, and higher quality services for the transport fleet, an improvement of operations planning, and a more productive use of shore and floating equipment--this is what the creation of OFS dispatcher rooms will yield.

Of great importance in improving the planning of work on providing services to transport vessels and their crews are the "Handbooks on Overall Services for the Transport Fleet" which help ship captains and watch chiefs to correctly orient themselves in submitting requisitions and to meet the requirements of the OFS apparatus more rapidly. The Moscow, Bel'skiy, Sukhonskiy, East Siberian, and Lena United steamship companies have developed and published "Handbooks on Overall Services" which have been distributed to the ships. But the Pechora steamship company for some reason has planned the publication of the handbook only for 1982.

Along with the shortcomings, there are also certain changes in the work of the OFS in the direction of improvement.

The steamship companies have worked out long-term plans for the development of overall services for the years 1981-1985. The plans map out a number of measures on improving services and envisage an improvement of uninterrupted services for the fleet which passes through ports without freight processing and the organization of mass cultural measures in the fleet with the enlistment of cultural bases. True, here also you cannot get by without reproaches. There are steamship companies which took a formal attitude toward the composition of the plan. The East Siberian Steamship Company, for example, made up an OFS development plan consisting of one sheet of paper with 12 points. In this kind of plan, of course, it is not possible to make provision for all of the problems of improving services.

This year the Central Scientific Research Institute of Water Transport will develop a new "regulation on overall services for the tranpsort fleet" to replace the one which was introduced on 1 June 1972 and which does not meet present demands with its obsolete form of reporting on the basis of which it is impossible to make judgements about the quality of the work of ports and steamship companies in OFS. The new form of reporting has been in effect since May of this year. It will make it possible to see how the plan for ship services as a whole and for uninterrupted services is being fulfilled, how many services have been provided to ships, and also how the fleet services plan is being fulfilled.

The optimal and efficient work of fleet servicing points and the planning of the work of shore and floating facilities can only be based on a system of norms. In 1981-1982 time norms will be worked out for services operations in the steamship companies where these norms do not yet exist. Substantiated norms will make it possible to more correctly organize the work of the sailing staff of the fleet and of shore workers, to plan the transportation process as a whole better and more effectively, and to work out an efficient technology for each of the systems of overall fleet services.

In conclusion I would like once again to emphasize that a formal attitude must not be taken toward servicing the fleet, that it is necessary to adopt the most urgent measures to eliminate the existing shortcomings in services, and to see to it that the servicing of ships is performed on a high level and is genuinely overall.

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## COALING OF SHIPS DURING CARGO HANDLING OPERATIONS RECOMMENDED

Moscow VODNYY TRANSPORT in Russian 9 Jul 81 p 1

[Article by V. Sergeyev, chief engineer of the fleet and enterprises department of the Main Administration For Waterways of the Ministry of the River Fleet:" Unutilized Reserves"]

[Text] An analysis of the idle time of the transportation fleet shows that a substantial part of it is made up of the coaling of ships and the waiting for this coaling to take place. For example, for the self-propelled dry-cargo fleet of the Ministry of the River Fleet alone the average time expenditures for coaling come to four-five days during a navigation period.

In order to eliminate these losses wider use has to be made of the method of coaling diesel ships during loading and unloading operations and even while they are in movement with the help of vessels of the OS type. These vessels are capable of performing several operations at once--fueling, lubrication, and the pumping of hold waters. This requires that they be reequipped. At the same time, the construction of new ships with a cargo capacity of 400-500 tons has to be accelerated.

During a navigation period these diesel ships--let us call them treatment plant-petroleum fuelers--would help to obtain an additional 3.2 to 4.6 billion ton-kilometers, and the income from them would come to more than 16 million rubles a year. With this money all of the existing OS type ships could be reequipped and 35 new diesel ships with an increased cargo capacity could also be built.

Coaling while enroute or in ports awaiting loading and unloading will decrease maneuver work and will reduce fuel expenditures for the entire fleet by 10,000 tons during a navigation period. Here they are--unutilized reserves.

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## OCEAN AND RIVER

# COAL HANDLING PROBLEMS AT VOSTOCHNYY PORT DISCUSSED

Moscow VODNYY TRANSPORT in Russian 23 Jul 81 p 2

[Article by P. Klinman, senior engineer of the commerical department of the Vostochnyy Port: "Orphaned Railroad Cars"]

[Text] In December 1978 a large pit coal handling complex with a productivity of more than five million tons a year was accepted for operations in the Vostochnyy Port. Since that time a stream of railroad cars containing coal from the Kuznetsk and South Yakutsk deposits has been streaming into the port. This stream, unfortunately, is not yet stable. This is explained by a shortage of locomotive traction and by traffic difficulties resulting from the overloadedness of the mainline. And, in addition, by a shortage of railroad cars.

According to standard rates, the time enroute from the shipping points of the Kuznetsk deposit to the port station of Nakhodka-Vostochnaya of the Far Eastern Railroad is around 20 days. Not all of the trains succeed in fitting themselves into this time. As for individual railroad cars, you can forget about it.

A railroad car endures many blows and adversities on the road. Only those which are newer can take them, while for the "old men" such rough times are difficult to endure and they, willy-nilly, fall apart on the road. The freight from broken-down cars is loaded into good ones--and because of this its quantity is reduced and its quality lowered. During the first quarter of 1981 alone the Nakhodka-Vostochnaya station saw the arrival of 16 cars with export coal which had been contaminated in the process of reloading at intermediate stations with gravel, pebbles, sand, metal, boards, rags, and so forth.

Finally, the ill-fated cars with their export coal arrive at their station of destination. The railroad workers have reason to become thoughtful when they look at the aspen log sticking despondently out of the coal and the boards in one of the littered cars, and at the sticks or rags in the others. This kind of coal probably will not go for export. Well, what is to be done? How many "good" cars are there at the station--400? Well, what are we waiting for: send the "good" cars to the port, and let the others stand awhile--their time has not yet come, maybe later we will "move" the dirty coal into the port....

And so these "ill-fated" cars stand in expectation of better times for a month, another, and then a third. Until the stream of cars with good clean coal falls off. It is then that the railroad workers begin to get nervous.

The port workers are by no means indifferent to the further fate of the contaminated coal upon whose unloading the railroad workers are insisting. After having examined the load, the State Inspectorate for Export Goods Quality of the Ministry of Foreigh Trade USSR categorically prohibited its shipment for export, about which it informed in writing the port, station, and owner--the All-Union "Soyuzpromeksport" Association of the Ministry of Foreign Trade USSR.

Should it be unloaded, or should it not be unloaded? In order to make clear the situation in which the port found itself, a brief review should be made of the operations technology of the coal complex. Its peculiarities were such that operations could be performed in it only in a single direction: the unloading of the coal from the cars into the warehouse and then loading it from the warehouses onto the ships. To load goods which had been unloaded into the warehouse back into the cars is technically impossible--there is nothing with which to do it.

The owner of the freight, the all-union "Soyuzpomeksport" Association would like to dispose of the coal which is not suitable for exports according to its judgement: to reorient it to consumers within the country and to ship it in ships that sail our coasts.

And then one telegram after another flies to Moscow: "the cars are standing on the tracks, make a decision about the freight...." From time to time calming answers come of the type: "the question concerning the coal which has been removed from export is being decided upon." Meanwhile the railroad cars stand there.

Knowing how severely idle standing time by railroad cars is penalized in transportation, the port workers appealed to the "Soyuzpomeksport," to the Dal'flot State Operations Association, and to railroad workers and seamen with requests that the situation be cleared up and that measures be taken to halt idle standing time by railroad cars with contaminated coal. The Vostochnyy Port applied for assistance to the agencies of people's control of the Primorskiy Kray and RSFSR. However, no instructions arrived from above as to what to do with the contaminated coal which was unsuitable for export and with the idle railroad cars.

The only organization which did not forget about the cars turned out to be the Nakhodka-Vostochnaya station. On this account there even exists documents made up by the station concerning the idle time by railroad cars containing, through the fault of the railroad, contaminated coal in which the guilty party for the idle time is quite definitely brought to light--the Vostochnyy Port.

This story is only about 16 railroad cars and, in general, it would have been possible not to mention it. If not for a single notorious "but." The number of cars, including "bad" ones, which has been coming into the port is still far from the complex's planned capacity. But what will happen in a year or two when the complex will be unloading hundreds of cars every day and there will not be dozens of "bad ones," as now, but hundreds? Is it really possible that they too will be doomed to long periods of idle time only because the railroad is not overly concerned about the quality of hauls, and the all-union "Soyuzpromeksport" Association about the fate of its coal?

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## OCEAN AND RIVER

### GDR, LATVIAN PORT RELATIONS DESCRIBED

Moscow PRAVDA in Russian 27 Jul 81 p 4

[Article by O. Meshkov "A Deep Channel"]

[Excerpts] The sounds of an orchestra carry over the pier. Greeting their colleagues--dockers from Rostok--the welcoming delegation raises bright bouquets of flowers into the air. Guests from the GDR have arrived in the capitol of Soviet Latvia with a practical purpose: to work for awhile side by side with the Riga port workers and to see how they perform loading and unloading operations. In a word, to exchange experience.

On the following day the guests, after having put on their special worker's clothes, set off as an entire brigade under the leadership of Peter Khaude for the Riga Maritime Commerical Port. There the Rostok dockers became acquainted with its complex and muti-faceted enterprise, and participated in the unloading of the diesel ship "Engineer Nechiporenko" which sails on the Riga-Rostok line.

This ship is of the "Ro-Ro" type--horizontal loading. There are more and more diesel ships of this class in the merchant marine fleet.

The Latvian Maritime Steamship Company changed over to operating them earlier than the GDR seamen. The Soviet specialists shared their experience with their colleagues from Rostok willingly, in a fraternal manner.

For example, the members of Peter Khaude's team learned much that was useful for themselves in Riga about the organization of the trans-shipment of flet. Externally, this packing material looks like large triangular boxes made of metal beams.

The guests were interested in the mode of operations of the enlarged overall teams whose initiator was the team leader of the Il'ichevsk port A.Baranovskiy who is known also in the GDR. Hurried notes went into notebooks: how much and what kind of equipment is at the disposal of an overall team, how is interchangability organized, and how are the people placed.

Peter Khaude is an engineer with a broad horizon. The team leader could not but notice how successfully the interaction between dockers, railroad workers, and motor vehicle transport workers has been organized in the Riga port. At his request, our German friends were acquainted with the work of the transportation center and with its planning.

When the day for saying goodbye came and the results were totaled up an order by the chief of the Riga Merchant Marine Port was read. Note was taken in the document of the shock work of our guests from the GDR. They were awarded a Testamonial. The German dockers had really demonstrated models of labor. On the average every day they fulfilled the overall output norms by 123 percent. The guests transfered all of their wages to the Peace Fund.

In 1977 an overall agreement on socialist competition was concluded which included dockers, seamen, railroad workers, and workers from all of the enterprises which make maritime cargo hauls between Rostok and Riga possible. The emphasis was now put on the technology of processing cargos--they began to be transported in packets and in flets. The results proved to be good: during the three years since the cooperation had begun it became possible to decrease voyage time by 2.5 times.

In 1979 when a "Ro-Ro" type ship came out onto the line--the "Engineer Nechiporenko" --the length of the voyage was decreased to seven days.

Of course, the path to this common labor victory was not a simple one. Quite a few problems had to be solved. The success was to a large extent determined by the fact that the cooperation which had been set up opened up a wide area for experiments aimed at increasing the freight turnover of maritime hauls. Here is a vivid example. In 1979 for the first time in our country containers began to be shipped between Rostok and Riga on a single transportation document--as they say, to the recipient's door. This means that while on route the cargo is not unloaded from the containers. In this way a greater speed for its movement is ensured, and complete safekeeping is guaranteed.

One more important innovation. The operation of the ship "Engineer Nechiporenko" is carried out on the basis of mutually advantageous terms. The maritime steamship companies of Latvia and the GDR share income and expenditures equally. This innovation is regarded as a qualitatively new level of integration.

Cable output is one of the constant cargos that comes into the Riga port from the GDR. In the past enormous rolls were delivered from the Berlin Cable Plant to Rostok on ordinary railroad flatcars. In the port they were loaded into trailers. Given the conditions of the Rostok harbor, this operation was quite expensive. And then specialists from Riga and Rostok got together to discuss making the transportation of cable cheaper. As a result of the joint work, it was decided to ship the rolls from the Berlin enterprise to the warehouses of the specialized base in Riga in flets. Using equal shares, the necessary number of these flets were acquired. On the way back from Riga to Rostok, cardboard is shipped in them.

The Riga Merchant Marine Port is rightly regarded as one of the most modern with respect to equipment. The level of the overall mechanization of loading operations here reaches 94 percent. But there also are, of course, unutilized reserves. Trips by the Riga workers to Rostok and exchanges of experience and technical information with the GDR dockers helps to eliminate the bottlenecks that still exist in the mechanization of port work more rapidly. For example, the Riga workers noticed how effectively their adopted brothers used a floating pneumatic grain loader. Beginning with March of this year a similar loader began to operate in the Riga port.

In their turn, our German friends became interested in Riga in the experience of processing large capacity containers with the help of gantry cranes. The Riga people helped them to manufacture special equipment, and labor productivity in this operation has markedly increased for the GDR dockers.

The use on the Riga-Rostok line of a specialized vessel of the "Ro-Ro" type has increased the demands upon the organization of the work of dockers. In Riga the first stage of a harbor-terminal which is especially designed for such ships has already gone into operation. This is a modern structure in which a fundamentally new mechanization scheme is used. It has become possible to make efficient use of expensive warehouse space, and the system of finding containers has been simplified. The efficiency of loading and unloading work has increased.

Of course, as in any large matter, we have our difficulties. For example, there is an acute problem in transporting the cable output which is received from the GDR from the territory of the Riga port. The necessary number of semi-cars does not exist. I think that our republic and union supply organizations have to find a way out of this situation as quickly as possible. Our German friends also have reserves. Now, especially after the commissioning of the new terminal, our dockers are processing the "Engineer Nechiporenko" more rapidly than their colleagues. A simular terminal is also being built in Rostok. When it begins to operate there there will be a real possibility of reducing the voyage time of the vessel to five days. And this will produce a large economic effect.

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## OCEAN AND RIVER

### BRIEFS

TRANSPORTATION ON THE OB RIVER--Ships of the Barnaul river port set sail carrying their first cargoes. They carried reinforced-concrete structures, lumber and pipes to the oil workers and geologists in the north. The Barnaul river-transport workers have taken upon themselves great commitments for 1981: To transport 30,000 tons of national economic freight in excess of the plan target. They regard as a key reserve the collaboration with the railroad workers and truck drivers, with whom they have drawn up a general agreement. [Text] [Moscow IZVESTIYA in Russian 28 Apr 81 p 2] 8760

NEW TANKER--The first tanker of the new "Pobeda" series--a ship of 84,500 tons displacement which was built by the workers of the Kerch Zaliv Shipbuilding Plant imeni B. Ye. Butoma--is being prepared for performance tests. The new sea-going liner can carry up to four kinds of oil and oil products. [Text] [Moscow EKONOMICHESKAYA GAZETA in Russian No 21, May 81 p 3] 8760

NEW HYDROFOIL--The "Kolkhida", a new sea-going vessel equipped with hydrofoils, presently is undergoing performance tests at Georgia's Black Sea coast. Two spacious saloons can accommodate 120 passengers. Two powerful diesel engines--built in the GDR--give the ship great speed, and the automatic control system reduces to a minimum pitch and roll--even in fairly choppy seas. The new comfortable, fast and economical ship replaces its predecessor, the "Kometa." [Text] [Moscow VODNYY TRANSPORT in Russian 10 Mar 81 p 2] 8760

OPENING UP SMALL SIBERIAN RIVERS--Leningrad, 21 April--Leningrad specialists are helping the water-transport workers to transform small Siberian rivers into busy transport highways. Navigational materials compiled by the Main Chart Office of the RSFSR Ministry for the River Fleet have guided the sailors along complex fairways. Presently, charts of the Aldan River have been dispatched to Yakutsk. The Leningrad specialist are successfully implementing a large-scale program aimed at transforming into busy transport arteries as yet unnavigable, shallow, white-water rivers in the eastern regions of the country. For the Siberians, a tugboat has been built that is capable of taking trains weighing up to 2,000 tons through reservoirs not exceeding 1 meter in depth. This is speeding up freight delivery, above all delivery to the construction sites of the Baykal-Amur Railroad. [Text] [Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 22 Apr 81 p 2] 8760

NEW PORT NEAR ARCTIC CIRCLE--Beyond the Arctic Circle, in the lower reaches of the Ob River, a new port is being built in connection with the "Sibgiprorechtrans" engineering project--the largest port in the north of Tyumenskaya Oblast'. This port will serve the workers extracting gas on the Urengoy and Medvezh'e. During the short navigational period of the north, the freight turnover of the Labytnangi Port will exceed 1 million tons. On the landing pier--nearly 900 meters long--there will be operating 30 portal cranes with a hoisting capacity of between 5 and 32 tons. At the site of the future port, construction and assembly workers are presently at work; an approach road and intra-site railroad tracks are being laid out; storage and service buildings are being erected, and construction of the pier installations is being completed. All this work is being done under permafrost conditions. The Labytnangi Port will become fully operational in the current five-year plan period. [By I. Ivanov, Tyumenskaya Oblast'] [Text] [Moscow NEDELYA in Russian No 26, 22-28 Jun 81 p 3] 8760

NEW PORT ON LOWER DANUBE--This is the youngest port in the country, a port that has not yet been entered in the naval charts. It was built--at the mouth of the Danube, where it empties into the Black Sea--exclusively for servicing Soviet lighter transporters. But presently the Ust'-Dunaysk Port has been opened for receiving and processing large-capacity ships from abroad carrying bulk cargo and timber. There has arrived in this water area the Philippine motor ship "Elly Champion," transporting 27,000 tons of iron ore from India to Hungary. The ore is transhipped by direct variant of the ship's hold--the river barge. The barge trains go up-river on the Danube to Hungary's gigantic Chepel Steel Works. "For taking in large sea-going vessels carrying bulk cargos," says V. Pimenov, the director of the Ust'-Dunaysk Port, "we have fitted out an auxiliary moorage and we have organized a collective of stevedore-mechanics. We are also starting to take in our own Soviet freighters; the first Soviet ship was the Black Sea motor ship "Parfentiy Grechaniy." Another novelty: There is a new dock for lighter repair. We are also successfully performing our principal function: Taking in and processing our fleet of lighter transporters. The lighter transporters "Yulius Fuchik" and "Tibor Samueli" have already completed over 30 voyages to ports in Vietnam, India and Pakistan. The turn-around time of a lighter transporter going to India or Pakistan is 33 days, and of a lighter transporter calling at the ports of these two countries and Vietnam, 47 days. It takes conventional freighters almost twice as long to complete these voyages. The lighter transporters do not need special cargo-handling berths; they perfectly carry out these operations on the roads. The freight turnover of the youngest port is increasing. In 1981, it is to take in and dispatch twice as much as in the preceding year: 1,115,000 tons. [By I. Lyandres, Odessa] [Text] [Moscow NEDELYA in Russian No 23, 1-7 Jun 81 p 2] 8760

OMSK PORT OPERATIONS--More than a million tons of cargo have already been dispatched from the docks of the Omsk River Port since the opening of the navigation season on the Irtysh. Dozens of ships have left here for the north, for the petroleum and gas extracting areas of the Tyumenshchina. They will deliver construction elements, food, various equipment, and piping to geologists and petroleum and gas workers and also to hunters and deer raisers. In all, during the navigation period the Omsk port workers--the initiators of the All-Russian Socialists Competition in river transport--are committing themselves to dispatch more than 11 million tons of cargo, which is substantially more than last year. The success of the Omsk port workers is being helped by the wide employment of the experience of our Leningrad transportation workers who have established close work collaboration with railroad and other related workers. [Text] [Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 10 Jun 81 p 1] 2959

NEW AIR-CUSHION TRANSPORTER-- Dock workers at river ports will soon be able to do without the special overalls which are used during the unloading of diesel ships containing sand, gravel, and crushed stone. Industrial tests have been completed at the wharfs of the Neva Harbor on a "clean" air-cushion transporter which has been created by the scientists of the Institute of Water Transport in collaboration with specialists from the Northwestern River Steamship Company. The innovation is characterized by the chief virtues of air-cushion vessels: speed, reliability, and economy in operations. Differing to its advantage from the known models, the new unit unloads a large capacity diesel ship three times more rapidly. Also important is the fact that its running track is completely hermetically sealed. This excludes the pollution of the air and of the river waters. [Text] [Moscow VODNYY TRANSPORT in Russian 1 Aug 81 p 4] 2959

ALL-WEATHER HANDLING DEVICE--The port workers of Feodosiya have developed and introduced at their piers an automatic device which lays the pneumatic machinery piping on ships for the transfer of loose cargos. The innovation reduces the time needed for preparatory operations by 15 times and makes it possible to decrease the number of dockers by three times and to carry out the processing of diesel ships during practically any weather. [Excerpt] [Moscow VODNYY TRANSPORT in Russian 2 Jul 81 p 1] 2959

NEW LATVIAN RIVER PORT-- Work has begun on the construction of the largest river port in Latvia. The first hundreds of cubic meters of dirt under the new harbor have been lifted from the botton of the Daugava. The port will be located opposite the commercial port and will help to unload its wharfs and to free thousands of railroad cars. Next year the port will accept its first diesel ships. Its capacity is one million tons of processed cargos a year. [Text] [Moscow KRASNAYA ZVEZDA in Russian 10 Jul 81 p 1] 2959

ANTARCTIC ATMOSPHERIC RESEARCH--The atmosphere of the areas which lie close to the Antarctic absorbs 1.5 times more solar energy than had previously been believed--this was demonstrated by research carried out by scientists from the Institute of Atmospheric Physics of the USSR Academy of Sciences. On board the scientific research ship "Professor Zubov" it turned out that the more powerful the cloud formation, the more solar energy it absorbs. This is explained by the fact that solar rays in clouds pass along a long and complex broken line, repeatedly reflecting against the suspended drops of water. The Antarctic and its adjoining areas play an important role in the formation of the planet's weather. [Text] [Moscow VODNYY TRANSPORT in Russian 25 Jun 81 p 4] 2959

ANTARCTIC MARITIME RESEARCH--Yesterday the scientific expedition vessel "Mikhail Somov" returned from the Antarctic to its home port. The sixth regular voyage to the South Polar Continent which lasted for 244 days has been completed. We have asked the director of seasonal operations of the 26th Soviet Antarctic Expedition, the experienced Polar explorer V.I. Serdyukov, to comment on its results:--The flagman of the Soviet Antarctic Flotilla has completed the navigation period at the icy ledges of the "white continent." Having handed over the scientific watch to their comrades, the researchers and specialists who wintered at the Russkaya and Leningradskaya stations and the oceanologists of the maritime expeditionary detachment have returned to their homeland. The program of scientific observation has been completely fulfilled and all of the South Polar stations have been provisioned with the necessaries. The concluding stage of the work in the Antarctic--supplying fuel to the stations Mirnyy and Molodezhnaya--took place under exceptionally severe weather and ice conditions. Together with the tanker "BAM," the "Mikhail Somov" found itself here at the threshold of the Antarctic winter, and this is a time of cruel storms and frosts and of the intensive formation of ice in the sea. After the conclusion of the fueling operation at the approaches to Mirnyy, for around ten days the ships forced a 20-mile zone of heavy hummocked ice. There were times when, encased by a white coat of mail, they were not able for many hours to move from the spot. It seemed that there was no way into the open ocean and that they would have to winter in the Davis Sea....Only on 14 May, accompanied by a fierce hurricane which reached a speed of 45 meters per second and in an impenetrable curtain of snow, the ships took a course toward their native shores. But the flagman's rest will not be long. After brief repairs, it will again set out for the South Polar waters where it will take part in the overall "Poleks-Yug" experiment. [Text] [Leningrad LENINGRADSKAYA PRAVDA in Russian 4 Jul 81 p 4]
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